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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,883

01/05/2004

Naoshi Adachi

12054-0023

2099

22902

7590

08/03/2006

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EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/750,883		ADACHI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Alexander O. Williams		2826	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/5/04</u> . | 6) <input type="checkbox"/> Other: _____  |

Serial Number: 10/750883 Attorney's Docket #: 12054-0023  
Filing Date: 1/5/2004; claimed foreign priority to 11/7/2003

Applicant: Adachi et al.

Examiner: Alexander Williams

Applicant's Pre-Amendment filed 1/5/2004 has been acknowledged.

Applicant's election with traverse of the species I, identified as figures 2 and 11 (device claims 1-4), filed 7/14/06 is acknowledged.

Applicant's arguments begins by stating "As explaining on page 13 of the specification, figures 11-13 are comparative illustrations showing arrangements that employ a holder but not a ring" is not to be persuasive. Species I, is identified as just figure II, species III, figure 3 and species IV, figure 4.

This application contains claims 5 and 8-10 drawn to an invention non-elected with traverse. A complete response to the final rejection must include cancellation of non-elected claims or other appropriate action (see 37 CFR § 1.144 & MPEP § 821.01).

This application contains claims 6 and 7 drawn to an invention non-elected without traverse.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claims 2 to 4 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2 to 4, the phrase "A heat treatment jig" should be -  
The heat treatment jig--.

Any of claims 2 to 4 not specifically addressed above are rejected as being dependent on one or more of the claims which have been specifically objected to above.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

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Initially, and with respect to claim 1, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

Claims 1 to 4, **insofar as some of them can be understood**, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Adachi Hisashi (Japan Patent # 2003-37112) in view of Motoyama Takeshi (Japan Patent #10-270369).

1. Adachi Hisashi (figures 1 to 7) specifically figures 7A-C and 10 show a heat treatment jig 1 for a semiconductor substrate that is mounted, comprising: a semiconductor substrate that is heat treated; a first jig 1 that is constituted of a silicon material and comes into direct contact with the semiconductor substrate to support; and a second jig (holder) that holds the first jig and is mounted on the heat treatment boat, fail to explicitly show the combination of a heat treatment jig for a semiconductor substrate that is mounted on a heat treatment boat of a vertical heat treatment furnace, comprising: a semiconductor substrate that is heat treated; a first jig that is constituted of a silicon material and comes into direct contact with the semiconductor substrate to support; and a second jig (holder) that holds the first jig and is mounted on the heat treatment boat.

Motoyama Takeshi is cited for showing a wafer support and vertical boat. Specifically, Motoyama Tekeshi (figures 1 to 8) specifically figure 1a and 8 discloses a

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semiconductor substrate that is mounted on a heat treatment boat 1 of a vertical heat treatment furnace, comprising: a semiconductor substrate 2 that is heat treated; a first jig that is constituted of a silicon material and comes into direct contact with the semiconductor substrate to support; and a second jig (holder) 3 that holds the first jig and is mounted on the heat treatment boat for the purpose of providing a heat jig preventing slip and dislocation caused by its own weight stress of the wafer or deflection of a heat treatment jig itself.

2. A heat treatment jig for a semiconductor substrate according to claim 1: the combination of Adachi Hisashi and Motoyama Takeshi show wherein the first jig has, in a region that comes into direct contact with the semiconductor substrate, a thickness in the range of from 0.5 to 10 mm, the surface roughness in the range of from 0.02 to 10 .mu.m and the flatness of 100 .mu.m or less; and the second jig has, in a region that comes into direct contact with the first jig, a thickness in the range of from 0.5 to 10 mm, the surface roughness in the range of from 0.02 to 10 .mu.m and the flatness of 200.mu.m or less.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

3. A heat treatment jig for a semiconductor substrate according to claim 1: the combination of Adachi Hisashi and Motoyama Takeshi show wherein the first jig is 0.5 mm or more in a width that comes into direct contact with the semiconductor substrate.

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Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

4. A heat treatment jig for a semiconductor substrate according to claim 2: the combination of Adachi Hisashi and Motoyama Takeshi show wherein the first jig is 0.5 mm or more in a width that comes into direct contact with the semiconductor substrate.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Therefore, it would have been obvious to one of ordinary skill in the art to use Adachi Hisashi's jig to modify Motoyama Takeshi's boat for the purpose of providing a heat jig preventing slip and dislocation caused by its own weight stress of the wafer or deflection of a heat treatment jig itself.

As to the grounds of rejection under section 103, see MPEP § 2113.

Claims 1 to 4, **insofar as some of them can be understood**, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamaga Kenichi et al. (Japan Patent #09-199438).

1. Yamaga Kenichi et al. (figures 1 to 5) show a heat treatment jig 3 for a semiconductor substrate W that is mounted on a heat treatment boat of a vertical heat treatment furnace 1, comprising: a semiconductor substrate that is heat treated; a first jig that is constituted of a silicon material and comes into direct contact with the semiconductor substrate

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to support; and a second jig (holder) 30 that holds the first jig and is mounted on the heat treatment boat.

2. A heat treatment jig for a semiconductor substrate according to claim 1: Yamaga Kenichi et al. show wherein the first jig has, in a region that comes into direct contact with the semiconductor substrate, a thickness in the range of from 0.5 to 10 mm, the surface roughness in the range of from 0.02 to 10  $\mu\text{m}$  and the flatness of 100  $\mu\text{m}$  or less; and the second jig has, in a region that comes into direct contact with the first jig, a thickness in the range of from 0.5 to 10 mm, the surface roughness in the range of from 0.02 to 10  $\mu\text{m}$  and the flatness of 200  $\mu\text{m}$  or less.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

3. A heat treatment jig for a semiconductor substrate according to claim 1: Yamaga Kenichi et al. show wherein the first jig is 0.5 mm or more in a width that comes into direct contact with the semiconductor substrate.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

4. A heat treatment jig for a semiconductor substrate according to claim 2: Yamaga Kenichi et al. show wherein the



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first jig is 0.5 mm or more in a width that comes into direct contact with the semiconductor substrate.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to the grounds of rejection under section 103, see MPEP § 2113.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/48,668,732,773,706,707,712 432/253,258,5-7,152,241,11 211/41.18 414/160,287,332,403,935 118/715 206/710,832 438/680	7/28/07
Other Documentation: foreign patents and literature in 257/48,668,732,773,706,707,712 432/253,258,5-7,152,241,11 211/41.18 414/160,287,332,403,935 118/715 206/710,832 438/680	7/28/07
Electronic data base(s): U.S. Patents EAST	7/28/07


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O. Williams whose telephone

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number is (571) 272 1924. The examiner can normally be reached on M-F 6:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander O Williams  
Primary Examiner  
Art Unit 2826

AOW  
7/28/06